

What is claimed is:

1. A manufacturing method of a metallic film to a planar lightwave circuit, comprising the steps of:

preparing a mask having a hole approximately formed in the same shape as the metallic film manufactured on at least one of front and rear faces of the planar lightwave circuit;

arranging said mask such that the hole of the mask corresponds to a manufacturing portion of said metallic film; and

manufacturing the metallic film in the manufacturing portion of said metallic film through the hole of the mask.

2. A manufacturing method of the metallic film to the planar lightwave circuit according to claim 1, wherein the metallic film is manufactured after annealing process of the planar lightwave circuit is performed.

3. A planar lightwave circuit having a metallic film and the waveguide construction of an arrayed waveguide grating, and this waveguide construction comprising:

one or more optical input waveguides arranged side by side;

a first slab waveguide connected to the exit end of

said optical input waveguides;

an arrayed waveguide connected to the exit end of said first slab waveguide, and consisting of a plurality of channel waveguides arranged side by side for transmitting light that has traveled through said first slab waveguide, said channel waveguides having different lengths with the difference preset;

a second slab waveguide connected to the exit end of the arrayed waveguide; and

a plurality of optical output waveguides arranged side by side and connected to the exit end of said second slab waveguide;

wherein a slab waveguide is divided into two by intersecting planes that intersect the route of the light traveling along the slab waveguide. The intersecting planes serve as dividing planes and divide a waveguide forming region into a first waveguide forming region that includes one portion of the divided slab waveguide and a second waveguide forming region that includes the other portion of the divided slab waveguide. One or both of the first waveguide forming region and the second waveguide forming region are moved along the dividing planes by a position shifting member;

an end portion side of the position shifting member is fixed to at least the one of the first waveguide

forming region and the second waveguide forming region through the metallic film; and

the metallic film is manufactured by the manufacturing method of the metallic film mentioned above.

4. A planar lightwave circuit having a metallic film and the waveguide construction of an arrayed waveguide grating, and this waveguide construction comprising:

one or more optical input waveguides arranged side by side;

a first slab waveguide connected to the exit end of the optical input waveguide;

an arrayed waveguide connected to the exit end of said first slab waveguide;

a second slab waveguide connected to the exit end of said arrayed waveguide; and

a plurality of optical output waveguides arranged side by side and connected to the exit end of said second slab waveguide;

wherein at least one of said first and second slab waveguides is divided into two by intersecting planes that intersect the route of the light traveling along the slab waveguide;

an end portion side of the position shifting member is fixed to at least the one of the first waveguide

forming region and the second waveguide forming region
through the metallic film; and

said metallic film is manufactured by the method of
claim 2.